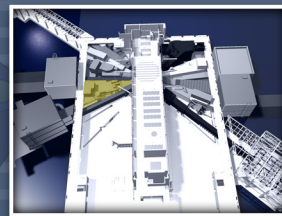


# INSTRUMENT

BEAM LINE

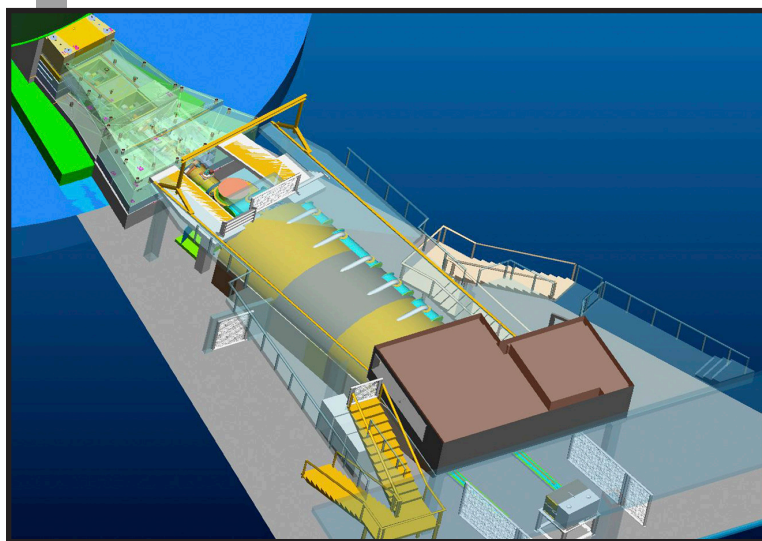
# 6

# Fact Sheet



## EXTENDED Q-RANGE SMALL-ANGLE SCATTERING DIFFRACTOMETER

The Extended Q-Range Small-Angle Scattering (EQ-SANS) Diffractometer is designed to study non-crystalline, nano-sized materials in solid, liquid, or gas forms such as polymers, proteins in solution, and micelles. EQ-SANS will have very high intensity and wavelength resolution. It will also have a wide Q coverage, allowing simultaneous data collection in both low and high Q regions. Scattering from nano-materials are



concentrated mostly in a forward direction, or small angles. This scattering data will yield size and shape information of the nano-particles. Applications include the study of polymers, better detergents and soaps from improved micelles, the study of proteins for better drug design and in materials of interest to the oil industry.

### SPECIFICATIONS

Source-sample distance	14 m
Bandwidth	3-4.3 Å
Moderator	coupled supercritical hydrogen
Integrated flux on sample	$\sim 10^7 - 10^9$ n/cm <sup>2</sup> /s
Q range	$0.004 \text{ Å}^{-1} < Q < 10 \text{ Å}^{-1}$

#### Low-angle detector

Sample-detector distance	1 – 8 m
Detector size	1 m • 1 m
Detector resolution	8 mm

#### High-angle detector

Sample-detector distance	1 m
Angular coverage	$\sim 35^\circ - 150^\circ$
Detector resolution	8 mm

### RECENT SIGNIFICANT EVENTS:

- SNS project Critical Decision-4 milestone has been achieved.
- All major design work is complete.
- Procurement of all baseline-funded components is under way.
- The first section of the guide is installed.
- Installation of poured-in-place shielding is under way.

### FUTURE EVENTS:

- Summer 2007: Power level to exceed 100kW
- Fall 2007: Initial users will arrive for experiments
- Spring 2008: General User Program to open

### FOR MORE INFORMATION, CONTACT EQ-SANS STAFF

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[www.sns.gov/users/instrument\\_systems/instruments/elastic/qrange.shtml](http://www.sns.gov/users/instrument_systems/instruments/elastic/qrange.shtml)



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